



CLEVELAND-CLIFFS INC.  
Cleveland-Cliffs Minorca Mine Inc.  
5950 Old Highway 53 N., Virginia, MN 55792  
P 218.749.5910 clevelandcliffs.com

January 29, 2021

Regional Administrator  
Air and Radiation Division  
U.S. Environmental Protection Agency, Region 5 (A-18J)  
77 West Jackson Boulevard  
Chicago, IL 60604

**Re: Cleveland-Cliffs Minorca Mine Inc.  
Semiannual Compliance Report for the 2<sup>nd</sup> Half of 2020  
Federal Implementation Plan for Regional Haze (FIP)**

On behalf of Cleveland-Cliffs Minorca Mine Inc., I am submitting the enclosed Semiannual Compliance Report for the Excess Emissions and Monitoring System Performance Reports for the 2<sup>nd</sup> Half of 2020 as required by 40 CFR 52.1235(e)(5-6). Please note that Cleveland-Cliffs Inc. completed the acquisition of ArcelorMittal USA LLC and its wholly-owned subsidiaries, including ArcelorMittal Minorca Mine Inc. on December 9, 2020. Subsequently, the name of the facility was officially changed to Cleveland-Cliffs Minorca Mine Inc. on December 23, 2020. No other changes, including changes to current operations and personnel, were made as a result of the acquisition.

It should be noted that while the continuous NO<sub>x</sub> and SO<sub>2</sub> emissions monitoring requirements of the FIP are in effect, Minorca is not yet subject to the NO<sub>x</sub> emission limitation specified by 40 CFR 52.1235(b)(1)(v).

Minorca has also submitted the fourth quarter CEMS report required by 40 CFR 52.1235(e)(7) on January 22, 2021. Some information specified within this report may refer you to this quarterly CEMS report and the previous CEMS reports in 2020 for additional details.

Minorca submitted a revision of the 38.16 lb SO<sub>2</sub>/hr on a 30-day rolling average limit in accordance with 40 CFR 52.1235(b)(2)(v) on April 6, 2018. That section of the FIP provides that Minorca “may calculate a revised SO<sub>2</sub> limit based on one year of hourly CEMS emissions data reported in lbs SO<sub>2</sub>/hr and submit such limit, calculations, and CEMS data to EPA.” This provision to modify the SO<sub>2</sub> limit exists because EPA recognized that the initial SO<sub>2</sub> limit was based on “limited stack test data” (78 Fed. Reg. 8718) and did not reflect the variability of Minorca’s operations. The revised emission limit calculation methodology follows the provisions of 40 CFR 52.1235(b)(2)(v) and results in an updated emission limit of 58.64 lbs SO<sub>2</sub>/hr based on a 30-day rolling average (prior to adjusting to account for operating levels of the Minorca furnace which were less than capacity during the data collection period). Adjusting to reflect the emissions associated with operation of the furnace at capacity using the above equation results in a limit of 73.79 lbs SO<sub>2</sub>/hr based on a 30-day rolling average. The revised limit became effective on the April 6, 2018 date of submittal of the limit revision package.

Please contact Jaime Johnson, Minorca's Environmental Manager, at (218) 305-3337 should you have any questions or comments regarding this report.

Sincerely,

*[Handwritten signature]*

**Robb Peterson**  
**Operations Manager**

**Enclosed:      Semiannual Compliance Report for the Regional Haze FIP covering the 2<sup>nd</sup> Half of 2020**

cc: Jaime Johnson (Cleveland-Cliffs Minorca Mine Inc.)  
Rich Zavoda (Cleveland-Cliffs Inc.)

# 40 CFR 52 Subpart Y Approval and Promulgation of Implementation Plans - Minnesota

## 52.1235 – Regional Haze

### Semi-Annual Report (52.1235(e)(5)-(6))

<b>Company Name (52.1235(e)(6)(i)):</b> Cleveland-Cliffs Minorca Mine Inc.		<b>Beginning date of reporting period (52.1235(e)(6)(iii)):</b> 7/1/2020
<b>Company Address:</b> 5950 Old Highway 53 North P.O. Box 1 Virginia, MN 55792		<b>Ending date of reporting period (52.1235(e)(6)(iii)):</b> 12/31/2020
<b>Person to Contact Regarding Submittal:</b> Jaime Johnson	<b>Mailing Address:</b> Same as above	<b>Telephone No:</b> 218-305-3337

<b>Identification of the process unit, control devices, and CEMS covered by the compliance report. (52.1235(e)(6)(iv)):</b>	
Process Unit: <ul style="list-style-type: none"> <li>Indurating Furnace (EU 026)</li> </ul>	
Control Devices: <ul style="list-style-type: none"> <li>Venturi Scrubbers (CE 014, CE 015, CE 016 and CE 017)</li> </ul>	
CEMS: <ul style="list-style-type: none"> <li>SO<sub>2</sub> CEMS (EU026-SO<sub>2</sub>)</li> <li>NO<sub>x</sub> CEMS (EU026-NO<sub>x</sub>)</li> </ul>	

Attachments	
A	Records of Startups and Shutdowns (52.1235(e)(6)(v))
B	Records of Malfunctions (52.1235(e)(6)(v))
C	Deviations (52.1235(e)(6)(vi)) <ul style="list-style-type: none"> <li>Emissions in Excess of Applicable Emission Standards</li> <li>Deviations of Requirement to Continuously Operate Emissions Control Device</li> <li>Deviations of Requirement to Continuously Operate CEMS</li> <li>Deviations for Failure to Maintain Records or Submit Reports</li> </ul>

Certification	
<b>Name, Title and Signature of Responsible Official Who is Certifying the Truth, Accuracy and Completeness of the content of the Report (52.1235(e)(6)(ii)):</b> I certify, based on information and belief formed after reasonable inquiry, that the statements and information in this document are true, accurate, and complete.	
<b>Signature:</b> 	<b>Date of report:</b> 1/29/21
<b>Printed Name:</b> Robb Peterson	<b>Title:</b> Operations Manager

**Table A**  
**Records of Startups and Shutdowns (52.1235(e)(6)(v))**

ID#	Description	Startup or Shutdown	Start	End	Actions Taken to Minimize or Eliminate Emissions	Consistent with SSM Plan?
EU 026	Indurating Machine	Shutdown	8/2/2020 09:56	8/2/2020 10:38	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	8/2/2020 11:56	8/2/2020 15:15	Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	8/19/2020 11:8	8/19/2020 11:58	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	8/19/2020 19:47	8/20/2020 05:40	Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	9/21/2020 06:11	9/21/2020 06:52	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	10/4/2020 15:43	10/7/2020 03:18	Scrubbers were started up prior to the furnace being lit and fuel being combusted. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	10/26/2020 16:28	10/26/2020 16:37	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	10/26/2020 17:58	10/26/2020 21:00	Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	11/11/2020 08:46	11/11/2020 09:30	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	11/11/2020 11:12	11/11/2020 11:32	Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	12/9/2020 14:13	12/9/2020 14:32	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	12/9/2020 17:01	12/9/2020 21:45	Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y
		Shutdown	12/17/2020 06:59	12/17/2020 07:40	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	12/17/2020 08:57	12/17/2020 13:18	Scrubbers were never fully shut down during the furnace shutdown. The furnace was relit and the pellet bed started up following a warm-up period for the furnace.	Y

<b>Table A</b> <b>Records of Startups and Shutdowns (52.1235(e)(6)(v))</b>						
ID#	Description	Startup or Shutdown	Start	End	Actions Taken to Minimize or Eliminate Emissions	Consistent with SSM Plan?
		Shutdown	12/25/2020 02:16	12/25/2020 02:21	Scrubbers were operated in compliance with parametric limits until pellet feed to the furnace stopped and natural gas fuel combustion ceased.	Y
		Startup	12/25/2020 09:03	12/25/2020 09:15	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
CE 014	Indurating Machine Scrubber A Low Efficiency SO <sub>2</sub> Scrubber	Shutdown	9/22/2020 12:45	10/3/2020 15:45	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	10/3/2020 16:00	10/4/2020 16:00	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
		Shutdown	12/25/2020 02:30	12/25/2020 02:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	12/25/2020 02:45	12/25/2020 09:15	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
CE 015	Indurating Machine Scrubber B Low Efficiency SO <sub>2</sub> Scrubber	Shutdown	9/21/2020 13:30	9/21/2020 20:45	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	10/3/2020 16:30	10/4/220 16:00	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
		Shutdown	12/25/2020 02:30	12/25/2020 02:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	12/25/2020 02:45	12/25/2020 09:15	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
CE 016	Indurating Machine Scrubber C Low Efficiency SO <sub>2</sub> Scrubber	Shutdown	9/22/2020 12:30	10/3/2020 15:45	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	10/3/2020 16:00	10/4/2020 16:00	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y

<b>Table A</b> <b>Records of Startups and Shutdowns (52.1235(e)(6)(v))</b>						
ID#	Description	Startup or Shutdown	Start	End	Actions Taken to Minimize or Eliminate Emissions	Consistent with SSM Plan?
		Shutdown	12/25/2020 02:30	12/25/2020 02:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	12/25/2020 02:45	12/25/2020 09:15	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
CE 017	Indurating Machine Scrubber D Low Efficiency SO <sub>2</sub> Scrubber	Shutdown	9/22/20 12:30	9/22/20 12:45	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	10/3/2020 16:00	10/4/2020 16:00	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
		Shutdown	12/25/2020 02:30	12/25/2020 02:30	Scrubbers were operated in compliance with parametric limits until furnace pellet bed stopped and fuel combustion ceased.	Y
		Startup	12/25/2020 02:45	12/25/2020 09:15	Scrubbers were started up prior to the furnace being lit and fuel being combusted. There were no exceedances of the SO <sub>2</sub> emission limitation.	Y
EU026 SO <sub>2</sub> EU026 NO <sub>x</sub>	Indurating Furnace CEMS: • SO <sub>2</sub> CEMS • NO <sub>x</sub> CEMS	N/A	N/A	N/A	The CEMS operated continuously while the furnace was in operation (combusting natural gas) except for the periods specified within the quarterly excess emissions and monitoring system performance reports required by 52.1235(e)(7).	N/A

Table B Records of Malfunctions (52.1235(e)(6)(v))																		
					Malfunction Dates				Malfunction Category (days)									
CE / GP	CE Description	Source Operating Time (Hours)	Parameter	Operating Limit	Value During Malfunction	Start	End	Time (days)	Startup	Shutdown	Control Equipment Problem	Process Problem	Other Known Problem	Unknown Problem	SSM Procedures Followed?	Malfunction Total Time (days)	Malfunction Time (%)	Actions Taken to Minimize or Eliminate Emissions
CE 014	Indurating Machine Scrubber A	4,072	dP	≥ 1.8 in H2O	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 014	Indurating Machine Scrubber A	4,072	Water Flow	≥ 803 gpm	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 015	Indurating Machine Scrubber B	4,072	dP	≥ 2.2 in H2O	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 015	Indurating Machine Scrubber B	4,072	Water Flow	≥ 814 gpm	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 016	Indurating Machine Scrubber C	4,072	dP	≥ 1.9 in H2O	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 016	Indurating Machine Scrubber C	4,072	Water Flow	≥ 795 gpm	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 017	Indurating Machine Scrubber D	4,072	dP	≥ 1.8 in H2O	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
CE 017	Indurating Machine Scrubber D	4,072	Water Flow	≥ 847 gpm	---	---	---	---	---	---	---	---	---	---	---	0	0.0%	---
EU026 SO <sub>2</sub> EU026 NO <sub>x</sub>	Indurating Furnace CEMS: <ul style="list-style-type: none"><li>• SO<sub>2</sub> CEMS</li><li>• NO<sub>x</sub> CEMS</li></ul>	179	CEMS Uptime	---	---	---	---	---	---	---	---	---	---	---	---	---	---	The CEMS operated continuously except for the periods specified within the quarterly excess emissions and monitoring system performance reports required by 52.1235(e)(7).

Table C Deviations (52.1235(e)(6)(vi))							
Deviation Type				Description	Cause(s)	Action to Address Deviation	Action to Avoid a Reoccurrence
Excess Emissions	Continuous Operation of Pollution Control Equipment	Continuous Operation of CEMS	Maintaining Records or Submitting Reports				
There were no identified deviations from the requirements of 52.1235 within the reporting period covered by this report.							